

**REMARKS**

The Official Action mailed November 18, 2009, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on November 4, 2004; February 17, 2005; March 1, 2005; July 26, 2005; November 2, 2005; March 21, 2006; April 4, 2006; September 8, 2006; December 22, 2006; January 5, 2007; June 22, 2007; October 16, 2007; and August 22, 2008.

A further Information Disclosure Statement was submitted on December 11, 2008 (received by OIPE on December 12, 2008) and consideration of this Information Disclosure Statement is respectfully requested.

Claims 7, 8, 10-13 and 15-24 are pending in the present application, of which claims 7, 8, 12, 13, 18 and 19 are independent. Claims 18 and 19 have been amended to better recite the features of the present invention. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

The Official Action rejects claims 18-21 and 24 as indefinite under 35 U.S.C. § 112, second paragraph, asserting that "[i]n claims 18 and 19, line 10, it is unclear whether the 'first laser beam is melt'" (page 3, Paper No. 20081107). The Applicant respectfully disagrees and traverses the above assertion in the Official Action.

Claims 18 and 19 have been amended for clarity as follows: "wherein a portion of the non-single crystalline semiconductor film irradiated [[by]] with the first laser beam is melted." The Applicant notes that amended claims 18 and 19 are similar to claims 12 and 13, which recite, in pertinent part, the following: "wherein a portion of the non-single crystalline semiconductor film irradiated with the elongated beam is melted." The Applicant respectfully submits that one of ordinary skill in the art, upon review of the

present specification and claims in their entirety, would readily understand that the above-referenced "wherein" clauses of claims 18 and 19 clearly recite that a portion of the non-single crystalline semiconductor film is melted. Moreover, one of ordinary skill in the art would recognize that laser beams do not melt.

The Applicant respectfully submits that claims 18 and 19 particularly point out and distinctly claim the subject matter which applicant regards as the invention and are definite. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 112 are in order and respectfully requested.

The Official Action rejects claims 7, 8, 10, 12, 13, 15-21 and 22-24 as obvious based on various combinations of U.S. Patent No. 6,884,699 to Ogawa, U.S. Patent No. 6,861,614 to Tanabe and U.S. Patent No. 7,102,750 to Takami. The Applicant respectfully traverses the rejection because the Official Action has not made a *prima facie* case of obviousness.

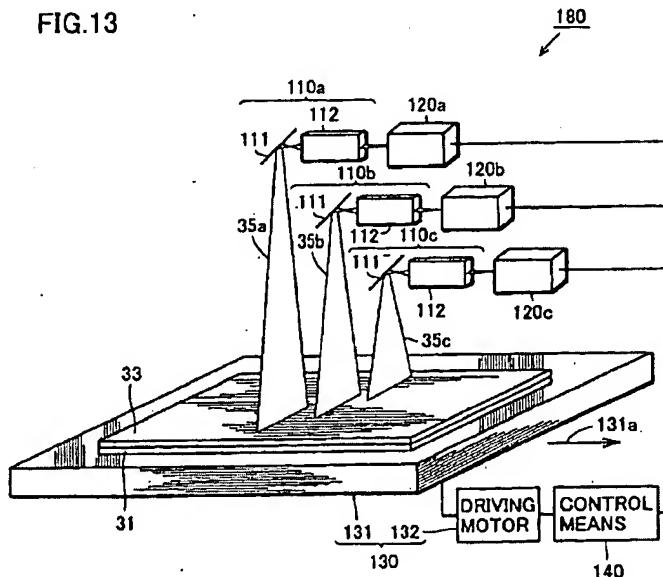
As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some reason to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Independent claims 7 and 8 recite, among other features, irradiating a surface with a second laser beam, the second laser beam having a fundamental wave emitted from a solid laser. Independent claims 12, 13, 18 and 19 recite, among other features, irradiating a non-single crystalline semiconductor film with a second laser beam, said second laser beam having a fundamental wave emitted from a solid laser. For the reasons provided below, Ogawa, Tanabe and Takami, either alone or in combination, do not teach or suggest the above-referenced features of the present invention.

The Official Action asserts that Ogawa discloses "irradiating the surface with a second laser beam concurrently with the elongated beam, said second laser beam having a fundamental wave emitted from a solid laser ... (see column 7, line 35 through column 13, line 25. Figures 1-5)" (page 4, Paper No. 20081107). The Applicant respectfully disagrees and traverses the assertions in the Official Action.

Ogawa appears to disclose lasers 35a, 35b and 35c emitted from laser oscillators 120a, 120b and 120c, respectively and that "[l]aser oscillators 120a, 120b and 120c are, respectively, Q switch Nd: YAG laser second harmonics oscillators" (column 11, lines 49-51; and Figure 13, reproduced below; emphasis added).

FIG.13



The Applicant respectively submits that a second harmonics oscillator potentially emits a beam having a second harmonics wave, but does not emit a beam having a fundamental wave, as recited in the instant claims.

Tanabe and Takami do not cure the deficiencies in Ogawa. The Official Action relies on Tanabe to allegedly teach "a system for the formation of a silicon thin film with ... [t]he elongated (long) beam ... wherein each of the first laser beam and the second laser beam is emitted from a continuous wave solid laser" (pages 5-6, Paper No. 20081107) and on Takami to allegedly teach "a method of in-situ monitoring of crystallization state ... a molten state, ... a elongated beam ... wherein each of the first laser oscillator and the second laser oscillator is a continuous wave solid laser" (page 9, *Id.*). However, Ogawa, Tanabe and Takami, either alone or in combination, do not teach or suggest that Ogawa should be modified to include a second laser beam having a fundamental wave emitted from a solid laser.

Furthermore, the absence of the above-referenced features in the prior art was recognized in the *Notice of Allowability* issued October 2, 2007. Specifically, under the heading "Allowable Subject Matter," the statement of reasons for allowance included the following: "[t]he cited prior art does not disclose or suggest a semiconductor device inter alia the limitations '....irradiating the surface with the elongated beam whereto an irradiation area of the elongated beam has at least a first portion and a second portion, said first portion having a lower energy density than the second portion; irradiating the surface with a second laser beam concurrently with the elongated beam, said second laser beam having a fundamental wave emitted from a solid laser ...'" (page 2, Paper No. 20070917). The Applicant respectfully submits that this statement is further evidence of the allowability of the present claims.

Since Ogawa, Tanabe and Takami do not teach or suggest all the claim limitations a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

  
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